

26.04.02.00

# **Title 26 DEPARTMENT OF THE ENVIRONMENT**

## **Subtitle 04 REGULATION OF WATER SUPPLY, SEWAGE DISPOSAL, AND SOLID WASTE**

### **Chapter 02 Sewage Disposal and Certain Water Systems for Homes and Other Establishments in the Counties of Maryland Where a Public Sewage System is Not Available**

**Authority: Environment Article, §§9-216, 9-217, 9-223, 9-252, 9-319, 9-510, 9-1108, 10-103, 10-301, and 10-304, Annotated Code of Maryland**

26.04.02.01

## **.01 Definitions.**

A. The following terms have the meanings indicated.

B. Terms Defined.

- (1) "Approving Authority" means the Secretary of the Department of the Environment or the Secretary's designee.
- (2) "Aquifer" means any formation of soil, sand, rock, gravel, limestone, sandstone, or other material, or any crevice from which underground water is or may be produced.
- (3) "At-grade system" means an on-site sewage disposal system utilizing a raised bed of gravel over the natural soil surface with a distribution system constructed so as to distribute sewage equally along the length of the gravel bed.
- (4) "Best Available Technology for Removal of Nitrogen (BAT)" means a technology that has been approved by the Department as a best available technology for removing nitrogen from onsite sewage disposal systems.
- (5) "Certified service provider" means an individual who is certified by the Department to perform operation and maintenance on BAT systems.
- (6) "Chemical toilet" means a toilet arranged to receive the nonwater-carried human waste directly into a deodorizing and liquefying chemical in a watertight tank.
- (7) "Cistern" means a covered tank in which rain water from roof drains is stored for household or other purposes.
- (8) "Community sewerage system" means any system, whether publicly or privately owned, serving two or more individual lots for the collection and disposal of domestic sewage or domestic sewage combined with industrial waste including various devices for the treatment of that sewage.
- (9) "Community water supply system" means a source of water and distribution system, including treatment facilities and storage facilities whether publicly or privately owned, serving two or more individual lots.
- (10) "Confined aquifer" means an aquifer bounded above and below by beds of distinctly lower permeability than that of the aquifer itself and which contains ground water under pressure greater than that of the atmosphere. This term is synonymous with the term "artesian aquifer".
- (11) "Contamination" means the introduction into water of any substance, which may transfer infectious agents or other foreign substances (organic, inorganic, radiological, or biological), in concentrations which may constitute a health hazard or impair the usefulness of the water.
- (12) "Controlled hazardous substance" means a substance identified as a hazardous substance by the Department of the Environment pursuant to Environment Article, Title 7, Subtitle 2, Annotated Code of Maryland, and COMAR 26.13.01.03B(26).
- (13) "Conventional on-site sewage disposal system" is a system that meets current regulations and includes a sewage treatment unit or BAT with standard trench or deep trench subsurface irrigation, a seepage pit on-site disposal or a sand mound system under Regulation .05 of this chapter, or an at-grade system under Regulation .05 of this chapter.
- (14) "County water and sewer plan" means a comprehensive plan and all amendments and revisions of it as required by Environment Article, Title 9, Subtitle 5, Annotated Code of Maryland, for the provision of adequate water and sewerage systems, whether publically or privately owned throughout the county, including towns, municipal corporations, and sanitary districts in the county.
- (15) "Deep trench" means a trench having perforated pipe in which the trench side wall and bottom area are used to calculate the absorptive area in the system design. At least 2 inches of gravel/stone covers the pipe and extends throughout the depth of absorptive side wall to the trench bottom.

(16) "Domestic sewage" means the liquid or water carried wastes derived from dwellings, including floating homes, business buildings, institutions, and the like, exclusive of wastes derived from industrial processes.

(17) "Floating home" means any vessel, whether self-propelled or not, which is:

(a) Used, designated, or occupied as a permanent dwelling unit, place of business, or for any private or social club, including a structure constructed upon a barge primarily immobile and out of navigation or any structure which functions substantially as a land structure while the same is moored or docked within Maryland; and

(b) Which has a volume coefficient greater than 3,000 square feet based upon the ratio of the habitable space of a vessel measured in cubic feet and the draft of a vessel measured in feet of depth.

(18) "Fall line" means the contact between the unconsolidated sediments of the coastal plain physiographic province and the crystalline rocks of the Maryland Piedmont physiographic province (see the map of Maryland Physiographic Provinces and Their Divisions in this chapter), and is approximated by the line connecting the numerous waterfalls and rapids in adjacent streams.

(19) "Flood plain soils" are those soils that are listed in the soil survey as either having a flood hazard or being susceptible to flooding.

(20) "Grease interceptor" means a receptacle designed to collect and retain grease and fatty substances normally found in kitchen or similar wastes.

(21) "Ground water" means underground water in a zone of saturation.

(22) "Hazardous substance" means any matter:

(a) That conveys toxic, lethal, or sublethal effects to plant, aquatic, or animal life, or which may be injurious to human health, or persists in the environment; or

(b) Which causes sublethal alterations to aquatic, plant, animal, or human systems through their cumulative or immediate reactions.

(23) "Holding tank" means a watertight receptacle which is used, or intended to be used, for the collection of sewage.

(24) "Liquid waste hauler" means a person engaged in the business of cleaning and emptying septic tanks, holding tanks, seepage pits, privies, or any other on-site disposal facility.

(25) "Mobile home" means a structure that can be used with or without a permanent foundation, is transportable in one or more sections, built on a permanent chassis, and is designed to be used as a dwelling when connected to the required utilities.

(26) "Non-conventional on-site sewage disposal systems" are experimental systems and innovative technologies not currently described in these regulations that are undergoing evaluation by the Department of the Environment and the Approving Authority.

(27) "On-site disposal" means the disposal of sewage effluent beneath the land surface.

(28) "On-site sewage disposal system" means a sewage treatment unit, collection system, disposal area, and related appurtenances related to on-site sewage disposal.

(29) "Percolation test" means a procedure used to determine the rate of movement of water through soil at the depth of installation of a proposed on-site sewage disposal system.

(30) "Permeability" means the capability of a soil, rock, aquifer, or confining bed to transmit waters or air.

(31) "Person" means an individual, partnership, firm, corporation, cooperative enterprise, or a governmental agency.

(32) "Pollution" means any contamination or other alteration of the physical, chemical, or biological properties of any ground or surface waters of this State, including a change in temperature, taste, color, turbidity, or odor of the waters or the

discharge or deposit of any organic matter, harmful organism, or liquid, gaseous, solid, radioactive, or other substance onto the ground surface or into any waters of this State that will render the ground or waters harmful or detrimental to:

- (a) Public health, safety, or welfare;
- (b) Domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses;
- (c) Livestock, wild animals, or birds; or
- (d) Fish or other aquatic life.

(33) "Potable water" means water which is free from substances or agents which may cause disease or harmful physiological effects, and which complies with the bacteriological and chemical quality requirements of COMAR 26.04.01 and 26.04.04.

(34) "Privy" means an earth or watertight pit or receptacle for receiving nonwater-carried human wastes over which is placed a privy house containing a seat or seats.

(35) "Sand mound system" means an on-site sewage disposal system utilizing a raised bed of sand fill with a distribution system constructed so as to distribute sewage equally into the sand fill.

(36) "Seepage pit" means a dug or drilled hole extending into porous soils for the purpose of introducing sewage effluent into the ground.

(37) "Septage" means the liquid and solid material pumped or removed from chemical toilets, septic tanks, seepage pits, privies, cesspools, or holding tanks when the system is cleaned and maintained.

(38) "Septic tank" means a watertight receptacle which receives the discharge of sewage from a building sewer or part of it and is designed and constructed to permit the settling and the digestion of the organic matter by anaerobic bacterial action.

(39) "Sewage" means water-carried human, domestic and other wastes and includes all human and animal excreta.

(40) "Sewage treatment unit" means a device designed and constructed to receive sewage and to provide treatment to reduce organic and inorganic matter and includes septic tanks, BAT, aerobic treatment units, or any other approved devices.

(41) "Sewer" means the system of pipes, lift stations, and other appurtenances that receive and convey sewage and is designed to exclude stormwater, surface water, and ground water.

(42) "Site evaluation" means the inventory and review of all site characteristics pertinent to on-site sewage disposal systems including topography, geology, surface and subsurface drainage, seasonal high water table, drinking water sources and wells, proximity to waters of the State, soil evaluation and percolation tests.

(43) "Soil evaluation" means a description of the physical properties of a soil including color, texture, structure, limiting horizons, and percolation rates.

(44) "Soil survey" means the scientific inventory of soil maps, soil unit descriptions, classification in the national system, and interpretation for use, as conducted by the National Cooperative Soil Survey by the United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with the Maryland Agricultural Experiment Station.

(45) "Spring" means groundwater seeping out of the earth where the water table intersects the ground surface.

(46) "Standard trench" or shallow trench means a trench having either at least 6 inches of gravel or stone beneath and at least 2 inches over the perforated pipe or at least 6 inches air space beneath an open chamber. Only the bottom area is used to calculate the absorptive area in the design of a standard trench.

(47) "Stream" means a perennial or intermittent watercourse of groundwater origin.

(48) "Subsurface sewage disposal" means the process of on-site sewage disposal in which the sewage effluent is applied to land by distribution beneath the surface through perforated pipes or pressurized pipes and includes a standard trench, deep trench, sand mound or at-grade system.

(49) "Unconfined aquifer" means an aquifer not bounded above by a bed of distinctly lower permeability than that of the aquifer itself and containing ground water under pressure approximately equal to that of the atmosphere. This term is synonymous with the term "water table aquifer".

(50) "Unconsolidated material" means uncemented soil and sediment material having not more than 70 percent coarse fragments (greater than 2 millimeters) by weight or 50 percent coarse fragments (greater than 2 millimeters) by volume. Volume is estimated by visual comparison with a standard chart.

(51) "Water supply system" means a system that provides water for human consumption through pipes or other constructed conveyances and includes all sources of water that are or may be used as potable water including wells, springs, cisterns, or other sources and their appurtenances, such as, pitless adaptors, pumps, pressure tanks, water lines, and treatment and storage facilities.

(52) "Well" means any hole that extends more than 20' below the ground surface to explore for ground water, to obtain or monitor ground water, or to inject water into any underground formation from which ground water may be produced or to transfer heat to or from the ground or groundwater.

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## **.02 General Provisions.**

A. The requirements of this chapter apply to new on-site sewage disposal systems and non-community water supply systems, replacements, additions to existing systems, repair or replacement of an existing system and any potential changes in the strength or volume of the sewage entering an on-site sewage disposal system.

B. If a community sewerage system is adequate and economically available to the building to be served, the Approving Authority may require a connection to the system.

### **C. On-Site Disposal System.**

(1) Notwithstanding any other provision of this regulation, the Department may approve an on-site sewage disposal system:

(a) For a lot or parcel that was recorded and approved by the Department on or before November 17, 1985 if it meets the Department's regulations and policies that were in effect on November 17, 1985, and has at least one replacement system area; or

(b) For a lot or parcel that was recorded and approved by the Department on or before November 18, 1985 and was approved subject to a 10,000 square foot or greater disposal area, if it meets the other requirements and policies that were in effect on November 17, 1985. However, if a lot was approved subject to a 10,000 square foot disposal area, this disposal area is required; or

(c) For a lot that was recorded without Department approval before November 18, 1985, if it meets the other requirements of this regulation except that only area sufficient for an initial and one replacement system is required for the lot's initial dwelling unit. A 10,000 square foot area sufficient for an initial system installation and two replacement systems is required for each additional dwelling unit.

(2) If the Department has approved a county's groundwater protection plan, a sewage disposal system may be installed with less than a 4-foot treatment zone in a coastal plain county if the system complies with a groundwater protection report incorporated in the county's master water and sewerage plan. These counties include Talbot, Dorchester, Wicomico, Worcester, Somerset, Caroline, and Queen Anne's. A maximum density requirement of 160 residences or its equivalent per square mile for ground water protection shall apply in these areas for lots where direct ground water penetration is used for sewage disposal.

D. A person may not dispose of sewage, body, or industrial wastes in any manner which may cause pollution of the ground surface, the waters of the State, or create a nuisance.

E. A person may only dispose of sewage, body, or industrial wastes in accordance with an approved on-site sewage disposal permit or other method of disposal approved by the Approving Authority.

### **F. Water Supply for Non-Community System.**

(1) Only the following may be used as a water supply for residential and other establishments not served by a community system:

(a) A well that satisfies the requirements of COMAR 26.04.04; and

(b) A surface water system permitted by the Department and which meets the requirements of COMAR 26.04.01.

(2) A spring or dug well may not be used as a water supply for a new homesite.

(3) A cistern may not be used as a potable water supply.

(4) A well for a new construction, addition, or alteration and a potential source of contamination shall meet the minimum setback requirements established in COMAR 26.04.04.

(5) The owner of an abandoned well shall properly fill and seal the well in compliance with the requirements of COMAR 26.04.04.11.

G. Building and floating home contractors, septic contractors, plumbers, licensed well drillers, drivers, and diggers, along with any person for whom the work is being performed, are responsible for compliance with these regulations and COMAR 26.04.04.

H. An on-site sewage disposal system may not serve more than one building unless specifically authorized by the Approving Authority. In those instances where connection of more than one building to an onsite sewage disposal system is approved, the available area for onsite sewage disposal shall meet the requirements established by §C of this regulation.

I. If water under pressure is not available, all human body wastes shall be disposed of in approved privies, chemical toilets, or any other installations acceptable to the Approving Authority. These methods may not be authorized for new construction.

J. Site evaluations including percolation tests shall be conducted under the supervision of the Approving Authority. Other pertinent soil evaluations may be required by the Approving Authority if considered necessary.

K. A holding tank may be used to resolve an existing on-site sewage disposal failure if a community sewerage facility is not available and on-site repair protective of the public health is not possible. A holding tank may not be permitted to serve new construction or for the purpose of adding capacity to an existing disposal system in order to accommodate a change in property use. For a building served by a holding tank, the Approving Authority may not allow a building addition or a change-in-use or operation that would result in a foreseeable or potential increase in sewage flows from the building. A holding tank may be permitted to serve a public building as determined by the Approving Authority and the Department of the Environment to be essential. The permission to allow a holding tank for an essential public service building shall include consideration of the following:

- (1) Whether the proposed building is directly related to and necessary to protect the public safety;
- (2) Whether the proposed building supplies any critical public service;
- (3) The volume and character of the waste to be generated, and, its ultimate disposal; and
- (4) The expected length of time the holding tank will be in service before a conventional disposal mode is available.

L. A holding tank is required to hold a minimum of 7 days effluent and shall be of watertight construction. The Approving Authority may require a test of water tightness, in accordance with Regulation .05(F) of this chapter. The owner shall regularly remove and dispose of the contents in accordance with Regulation .08 of this chapter. The applicant shall submit, along with the application, a maintenance contract which is acceptable to the Approving Authority and which includes an acceptable pumping schedule by an approved liquid waste hauler. The Approving Authority may issue a holding tank permit if it determines that the issuance of the permit complies with the requirements of this section and does not compromise the public health, a maintenance contract requires safe and adequate disposal of sewage generated, and a holding tank agreement and easement is recorded in the land records for the property.

M. Criteria for a Holding Tank for an Owner Occupied, Legally Occupied, and Legally Situated Dwelling Unit.

- (1) A community sewerage facility is not available and on-site repair is not possible.
- (2) The dwelling unit is presently legally occupied by the owner or some other person who has permission of the owner or is vacant, but could be occupied by the owner or some other person who has permission of the owner.
- (3) The dwelling is physically occupied in compliance with all required occupancy permits, except for any permit or permit requirement relating directly to the sewage disposal system. If no occupancy permit is required, a dwelling unit is legally if it is physically occupied.
- (4) The dwelling has all required governmental approvals relating to its size (including all enclosed floor space) and location.
- (5) The square footage of the original dwelling may is not increased.
- (6) The estimated daily sewage flow may not be increased beyond the proven historical use.

(7) The dwelling does not require major repairs.

(8) The dwelling is existing if it has been occupied year round within 3 years prior to the date of an application for approval of a sewage disposal system. The approving authority may grant a variance if:

(a) The applicant demonstrates to the satisfaction of the approving authority that occupancy was interrupted by events beyond his control;

(b) The dwelling is the only structure on the property; and

(c) The dwelling has been occupied year round within 7 years of the application.

N. No part of an on-site sewage disposal system may be covered or used until it has been inspected and approved by the Approving Authority or a third party approved by the Approving Authority.

O. If hydrologic or geologic problems exist, or if construction activities may adversely impact the sewage system, the Approving Authority may require installation, inspection, and approval of the on-site sewage disposal system before issuance of the building permit by the local agency issuing building permits.

P. The permittee shall backfill all excavations soon as possible. If an excavation is required to be left open, the excavator shall properly protect the excavation to prevent injury to humans and animals.

Q. Every person engaged in the business of removing and disposing of the solid and liquid contents of on-site sewage disposal systems shall obtain an annual permit from the Approving Authority.

R. Sewage or sewage effluent, treated or non-treated, may not be disposed of in any manner that is likely to cause contamination of a potable water supply system or waters of the State, or create a nuisance.

S. An Approving Authority may require operating permits for on-site sewage disposal systems.

T. A local jurisdiction may establish a responsible management entity to manage, operate and maintain an on-site sewage disposal system.



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### **.03 On-Site Sewage Disposal Permits.**

A. An applicant shall submit an application for an on-site sewage disposal permit in a form required by the Approving Authority and shall include a site plan, which identifies soil evaluations, percolation and other test locations, proposed system design, existing and proposed improvements, proposed BAT or other treatment methods and the location of existing and proposed wells to serve the property, along with any relevant datum concerning wells or disposal systems within 100 feet of the property line, and any additional information the Approving Authority may request.

B. The Approving Authority may issue a permit for an on-site sewage disposal system if it determines that the site and proposed design can safely dispose of sewage and conform with applicable laws and regulations. Within 30 days of a permit denial, the applicant shall be notified in writing as to the reason for denial.

C. In determining whether or not to issue an on-site sewage disposal permit, the Approving Authority shall evaluate the appropriateness and design of the proposed system. The review shall include consideration of all site evaluation information.

D. The applicant is responsible for submitting or making available all soils information, design specifications and other data that may be required by the Approving Authority to complete its permit review responsibilities.

E. A person may not construct or attempt to construct an on-site sewage disposal system without first receiving a permit from the Approving Authority. A person may not alter an on-site sewage disposal system or cause it to receive any increase in flow or change in the character of wastewater unless permitted by the Approving Authority.

F. A person may not construct or alter any structure, residence, floating home, or commercial establishment served or to be served by an on-site sewage disposal system or private water supply system, and a county or municipality may not issue, if applicable, a building permit or a use permit for the desired new construction or alteration, until the Approving Authority has:

(1) Issued both an on-site sewage disposal permit and a well construction permit for facilities served by an on-site sewage disposal system and a private water supply system;

(2) Issued an on-site sewage disposal permit for facilities served by an on-site sewage disposal system and a public water supply system;

(3) Issued a well construction permit for facilities served by a private water supply system and public sewerage; or

(4) Certified the existing on-site sewage disposal and water supply systems as capable of treating and disposing the existing sewage flows and meeting the water demand and any reasonable foreseeable increase in sewage flows or water demand. The Approving Authority shall consider the number of bedrooms, total enclosed living space and changes that affect the volume or character of the wastewater in making this determination.

G. If, in the opinion of the Approving Authority, a safe and adequate water supply is not available to the lot, an on-site sewage disposal permit shall be denied.

H. The Approving Authority may not permit an on-site sewage disposal system to be installed if, in the opinion of the Approving Authority, it may pollute a well water supply, a water supply reservoir, shellfish growing waters, bathing beaches, a lake or tidewater areas.

I. The permit to construct an on-site sewage disposal system is not valid for more than 2 years from the date of issuance, but may be renewed at the discretion of the Approving Authority. Additional testing or evaluations, before the renewal of a permit, may be required by the Approving Authority.

J. The permits required by this regulation are in addition to any approval to subdivide land pursuant to COMAR 26.04.03.

K. A permit issued for the construction of an on-site sewage disposal system shall include the statement that the Maryland Department of the Environment recommends septic tanks, BAT and other pretreatment units be pumped at a frequency adequate to ensure that solids are not discharged to the disposal area.

L. An on-site sewage disposal permit or a permit for an individual sewerage system may not be issued unless the project is in conformance with the approved county water and sewerage plan.

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## **.04 Site Evaluation.**

### **A. Site Evaluation Criteria.**

(1) In determining whether to approve a lot or parcel for on-site sewage disposal the Approving Authority shall consider the following site evaluation criteria:

(a) The general topography, geology, soil classification, and hydrology;

(b) Surface and subsurface drainage conditions;

(c) Soil descriptions, test results, and boring logs;

(d) Requirements for seasonal testing; and

(e) Performance of on-site sewage disposal systems and wells in the area and the potential impact of new on-site sewage disposal systems on individual water well supplies in adjacent areas.

(2) The applicant shall submit, or make available, all soils information, design specifications and other data that the Approving Authority may require to complete its permit review responsibilities.

(3) The applicant shall make available to the Approving Authority all information on private soil testing and environmental factors on the property that may impact onsite sewage disposal or potable drinking water supplies.

(4) A site evaluation is conducted, and the results are evaluated, in accordance with the following requirements:

(a) An adequate number of site evaluations including percolation tests and other pertinent observations, as required by the Approving Authority, are conducted within the area designated for on-site sewage disposal as necessary to determine the suitability of the area for sewage disposal.

(b) The Approving Authority may require additional site evaluations and percolation testing where soil texture or structure varies or limiting geologic conditions are encountered, or when the Approving Authority deems it necessary to evaluate a larger disposal and recovery area for the estimated sewage flow.

(c) The minimum allowable percolation rate after prewetting is 1 inch per 30 minutes, except for a system approved under Regulation .05V of this chapter.

(d) A percolation rate faster than 2 minutes per inch, after prewetting, may not be approved west of the fall line and may also be disapproved east of the fall line if, in the opinion of the Approving Authority, adequate protection of the ground water may not be provided due to the rapid movement of water through the soil.

(e) A percolation rate of between 2 and 5 minutes per inch, after prewetting, may be grounds for disapproval if in the opinion of the Approving Authority adequate protection of the ground water may not be provided due to rapid movement of water through the soil.

(f) In carbonate rock areas a minimum of four treatment zone observation test pits, excavated perpendicular to the bed rock ridges, are required per sewage disposal area.

(g) Each limiting horizons that may restrict the vertical flow of effluent in the soil treatment zone within 2 feet of the infiltrative surface is described in the site evaluation report. If a limiting horizon is identified, the design of the on-site sewage disposal system is adequate to overcome this limitation.

**B. Soils Testing Requirements.** In an area where the soil survey maps, soil borings or historical data indicate moderate or severe limitations based on seasonally perched or seasonally high water tables; site evaluations, a soil percolation test and any other test that the Approving Authority requires is performed at the time of the year when the highest water table is present as indicated by observation wells, rainfall totals and site conditions at the on-site sewage disposal area. The applicant

shall conduct all soil tests at the depth and in the soil intended to be used for the on-site sewage disposal system. The official source of soil information is the National Resource Conservation Service (NRCS) Soil Data Mart, a part of the National Soil Information System.

#### C. Soil Treatment Zones.

(1) Conventional on-site sewage disposal systems may not be approved where there is less than 4 feet of unsaturated, unconsolidated material sufficient to attenuate effluent below the bottom of the on-site sewage disposal system except as provided in §C(2) of this regulation and Regulation .05V of this chapter.

(2) In the coastal plain province where 4 feet of unsaturated, unconsolidated material sufficient to attenuate effluent below the bottom of the on-site sewage disposal system is not available, the Approving Authority may identify areas where on-site sewage disposal systems using less than 4 feet of unsaturated soil may be allowed, if:

(a) The aquifer is a Type III (other than Type I or Type II), pursuant to COMAR 26.08.02.09B; or

(b) The aquifer has limited potential to serve as a drinking water source. These aquifers shall meet one or more of the following conditions:

(i) Insufficient potable water to serve as a year-round supply due to seasonally fluctuating water tables;

(ii) Interconnection with tidewater such that if pumped for water supply, brackish water or saltwater intrusion into the aquifer has or would occur; or

(iii) Evidence the aquifer has already been polluted by, or is in imminent danger of being polluted, by activities in the area.

(3) All the following criteria are required for all areas in which aquifers have been designated, pursuant to §C(2) of this regulation, for installation of on-site sewage disposal systems using less than 4 feet of unsaturated soil below the bottom of the sewage disposal field or pit:

(a) The area is delineated in a ground water protection report prepared by the county government or its representative; and the groundwater protection report is approved by the county health department and included in the appropriate county water and sewer plan approved by the Department of the Environment.

(b) The groundwater protection report sets density, design, and construction requirements to minimize degradation of aquifers designated for discharge and justifies any variances to §C(3)(b)—(g) of this regulation.

(c) A quantitatively and qualitatively superior potable water supply is available from one or more deeper confined aquifers that are separated from the disposal aquifer by a confining aquiclude.

(d) Measures are taken by the county health department to ensure that the aquifer designated for waste disposal is not currently and will not be used for a potable water supply.

(e) Discharge to a surficial aquifer does not contaminate a deeper aquifer of Type I or II, pursuant to COMAR 26.08.01—.04, or any aquifer used for water supply.

(f) If a water supply well taps a confined aquifer beneath the disposal aquifer the permittee shall grout through the disposal aquifer.

(g) The on-site sewage disposal system and recovery area is located 100 feet from any well in a confined aquifer.

(h) Unimproved lots served by these on-site sewage disposal systems may not be less than 2 acres in size.

D. Approvals for lots in the Appalachian physiographic province of the State (see the map of Maryland Physiographic Provinces and Their Divisions in this chapter), where 4 feet of unsaturated, unconsolidated soil sufficient to attenuate effluent below the subsurface disposal system is not available, may require concurrent approval of the Department of the Environment at the discretion of the Water Management Administration. Training and assistance by the Water Management Administration personnel will be provided at the request of the Approving Authority. In limestone or dolomite areas of the Appalachian physiographic province, deviation from the 4-foot requirement may not be given for new development.

E. Sewage disposal areas shall meet all physical and distance requirements outlined in regulations .03 and 04 of this chapter, exclusive of easements, rights-of-way, buildings, and any other permanent or physical objects, and may not be disturbed by earth moving, compaction, tree removal or grading after approval by the Approving Authority without prior authorization of the Approving Authority.

F. The sewage disposal area for a dwelling unit or other building for human occupation on an individual lot recorded and approved by the Department on or after November 18, 1985, shall meet the following criteria:

- (1) The area is adequate for the installation of an initial and two replacement on-site sewage disposal systems; and
- (2) For each dwelling unit, or other buildings for human occupation, the area shall not be less than 10,000 square feet.

G. The sewage disposal area for a dwelling unit or other building for human occupation on an individual lot, recorded and approved by the Department before November 18, 1985, shall meet the following criteria:

- (1) The area is adequate for the installation of an initial and one replacement on-site sewage disposal system; and
- (2) For lots created subject to a minimum 10,000 square foot sewage disposal area, a minimum 10,000 square foot area is maintained.

H. The Approving Authority shall use the best available water usage information in determining estimated daily flows for institutional and commercial establishments for determining required sewage disposal area including area for initial and required replacement systems.

I. An on-site disposal system and replacement area may not be located in flood plain soils or on slopes in excess of 25 percent.

J. The following horizontal separation distances are required to be maintained between the on-site disposal system including its recovery area and the features listed although greater distances may be required at the discretion of the Approving Authority:

Feature	Separation Distance
(1) All steep slopes (>25 percent)	25 feet
(2) Springs	100 feet
(3) Drainage ways and gullies	25 feet
(4) Flood plain soils	25 feet
(5) Rock outcrops	25 feet
(6) Elevation of spillway crest water level in a water supply reservoir	300 feet
(7) Stream bank 3,000 feet or less upstream from a water intake on a water supply reservoir or intake on a stream used as a potable water supply	200 feet
(8) Stream bank greater than 3,000 feet upstream from a water intake on a water supply reservoir or intake on a stream used as a potable water supply	100 feet
(9) Water bodies not serving as potable water supplies including intermittent and perennial streams	100 feet
(10) Water well system in unconfined aquifers	100 feet
(11) Water well system in confined aquifers	50 feet
(12) Sink holes underlain by karst topography	100 feet
(13) Building foundations	10 feet

K. A lot located within 2,500 feet of the normal water level of an existing or proposed water supply reservoirs, measured

horizontally, within a 5,000-foot radius upstream from a water intake on a stream used as potable water supply source, or within a 5,000-foot radius of a water intake located within a reservoir shall have an area of not less than 2 acres and a minimum width of 175 feet. An on-site sewage disposal system may not be located within 300 feet, measured horizontally, of the normal high water level of a water supply reservoir. Normal water means the elevation of the spillway crest. These limitations do not apply to areas below the dam forming the reservoir.

L. The Approving Authority may consider an application for a variance from the requirements listed in §K of this regulation in order to cluster lots as provided under local law. However, the number of clustered lots under two acres may not exceed the number of lots that would have been approvable under §K of this regulation. A variance may not be granted that allows the transfer of density units or development rights to a subdivision located within 2,500 feet of a water supply reservoir.

26.04.02.05

## **.05 Design and Construction of Conventional On-Site Sewage Disposal Systems.**

A. Sewage from bathrooms, kitchens, laundry fixtures, and other household plumbing, exclusive of the backwash from potable water treatment devices, shall receive adequate treatment from a sewage treatment unit before the effluent is discharged to an approved on-site sewage disposal area.

B. On-site sewage disposal systems and replacement areas location requirements:

(1) The sewage disposal system is at least 100 feet removed from any water well system in unconfined aquifers and 50 feet from any water well system in confined aquifers.

(2) The on-site sewage disposal system is located downgrade from a private water supply. A variance to this requirement may be granted by the Department of the Environment after consideration of hydrogeologic conditions and recommendations of the Approving Authority.

C. The owner of a restaurant or an establishment discharging grease shall install a grease interceptor on each separate kitchen waste drain.

D. Residential Septic Tank Size Criteria. Septic tanks serving a residential use, not requiring a BAT system, shall meet the following criteria and tables. This table provides for use of garbage disposal units, automatic clothes washers, and other household appliances.

Septic Tank Criteria	
Number of Bedrooms	Minimum Septic Tank Capacity Below Outlet
3 or less	1,000 gallon
4	1,250 gallons
For each additional bedroom, add 250 gallons	

E. Criteria of a Residential Septic Tank.

(1) A residential septic tank shall have a minimum of two compartments or two tanks in series.

(2) A residential septic tank shall be made of materials and constructed in a manner acceptable to the Approving Authority.

(3) A residential septic tank shall be watertight. Manufacturers shall certify that septic tanks are watertight. The Approving Authority may require one of the following tests to determine watertightness.

(a) Vacuum Testing. Seal the empty tank and apply a vacuum to two inches of mercury. The tank is acceptable if 90 percent of the vacuum is held for 2 minutes.

(b) Water-Pressure Testing. Seal the tank with all the inlet and outlet pipes installed. Fill with water and let stand for 24 hours. Refill the tank. The tank is acceptable if the water as level measured in the tank remains the same for one hour.

F. Institutional Septic Tank Criteria. The applicant for an institutional or commercial installation, not requiring a BAT system, shall calculate the minimum septic tank capacity according to the following criteria:

(1) Flows of 1,500 gallons per day (gpd) or greater:  $V = 1,125 \text{ gallons} + 0.75Q$  where  $V$  = minimum septic tank volume,  $Q$  = estimated daily peak sewage flow;

(2) Flows of less than 1,500 gallons per day (gpd):  $V = 1.5 Q$ ; and

(3) 1,000 gallons is the minimum septic tank capacity.

G. Septic Tank Criteria where a BAT system is required under Regulation .07 of this chapter. If an approved BAT system includes a septic tank, the permittee shall size the septic tank in accordance with the requirements of the manufacturer or designer of the BAT.

H. Pump Chambers and Equipment Criteria.

(1) Pressure distribution systems, including sand mound and at-grade systems, have a pump that provides adequate capacity for handling peak flow at the design head. The design head shall include static head, friction head, and an additional 2 feet of discharge head.

(2) The pump is installed to allow the sewage to drain back to the pumping chamber from the distribution system to prevent freezing. Use of check valves is not recommended.

(3) A pump is used that can resist the corrosive effects of septic tank effluent.

(4) A minimum of 6 inches is provided between the pump intake and the floor of the pumping chamber.

(5) The pump is constructed and located to prevent the entrance of surface water or ground water.

(6) The dosing frequency is approximately 6 times a day.

(7) A minimum of 1-day storage capacity is provided above the high water alarm.

(8) A high water alarm is installed within the pumping chamber and wired on a circuit separate from that of the pump.

(9) The pumping chamber provides adequate volume to store the sewage between doses.

(10) The pump control sensor is located so that it is not affected by flow entering the pump chamber.

I. For residential property the minimum design flow is based on 150 gpd per bedroom. The Approving Authority may establish design flows based on equivalent square footage; however, the minimum design flow may not be less than 300 gpd per residence and 150 gpd per bedroom.

J. The Department shall provide guidance on estimating design flows for commercial and institutional establishments. Design flow is based on the maximum daily flow. Applications for commercial and institutional establishments shall include a proposed design flow for the system. The Approving Authority may approve design flows based upon actual flow measurements, estimated flows for square footage or estimated flow for similar establishments. The design flow may not be less than 400 gpd for a commercial or institutional establishment. Any facility discharging waste other than domestic sewage may be required to obtain an individual groundwater discharge permit.

K. Loading Rates for Onsite Sewage Disposal Systems. Maximum loading rates are based on wastewater with the equivalent strength of typical domestic sewage. A domestic, commercial, or institutional establishment with effluent quality stronger than 300 mg/l biological oxygen demand or 300 mg/l suspended solids shall employ a pretreatment unit to pretreat the effluent to a maximum of 300 mg/l biological oxygen demand and 300 mg/l suspended solids.

Maximum Loading Rates for Systems with Design Flow Less than 5,000 Gallons per Day	
Percolation Rate in Minutes for 1-Inch Drop After Prewetting	Maximum Loading Rate (Gallons per Day per Square Foot)
2 — 5	1.2
6 — 15	0.8
16 — 30	0.6
Maximum Loading Rates for Systems with Design Flow Greater than or Equal to 5,000 Gallons per Day *	



Percolation Rate in Minutes for 1-Inch Drop After Prewetting	Maximum Loading Rate (Gallons per Day per Square Foot)
2 — 5	0.8
6 — 15	0.6
16 — 30	0.4
* For systems with design flow greater than or equal to 5,000 gallons per day, loading rates may be increased by 50 percent if an individual groundwater discharge permit is issued and advanced pretreatment employed.	

L. The absorptive area required is calculated by dividing the appropriate design flow by the appropriate loading rate.

M. Standard trench length is calculated by dividing the required absorptive area by the proposed trench width.

N. Standard Trench System.

(1) Approval of Standard Trench System. A standard trench system may be approved by the Approving Authority if an adequate treatment zone and absorptive area are available. The system size is based on bottom absorptive area only.

(2) Standard trench length =  $a \div w$

Where:

a = The absorptive area required for the desired use by reference to regulation .05M.

w = Width of trench in feet;

(3) Minimum distance, sidewall to sidewall, between standard trenches is at least 6 feet of undisturbed soil between 2-foot wide trenches and 9 feet between 3-foot wide trenches.

O. Deep Trench System.

(1) Approval of Deep Trench Systems. A deep trench system may be approved by the Approving Authority when sufficient soils are available to allow the use of side walls in determining minimum absorption area requirements and an adequate treatment zone is available.

(2) Deep trench length =  $[(w+2) + (w+1+2d)] \times a \div w$

Where:

w = Width of trench in feet;

d = Depth of usable sidewall area on the basis of percolation tests, observation of the soil profile at various soil depths, and other hydrogeologic data as may be required by the Approving Authority; and

a = The absorptive area required for the desired use by reference to regulation .05M.

(3) Minimum distance, sidewall to sidewall, between deep trenches shall be two times the effective absorptive depth of gravel in the deepest trench or 18 feet, whichever is the lesser distance. The distance between trenches may not be less than 10 feet.

P. The minimum distance between seepage pits is equal to three times the diameter of the largest pit.

Q. Criteria for Large Onsite Sewage Disposal Systems

(1) Property with an accumulative maximum daily flow of 5,000 gpd or greater, served by onsite sewage disposal, is a large onsite sewage disposal system.

(2) An applicant for a large onsite sewage disposal system with a maximum daily flow of 10,000 gpd, or more, shall obtain an Individual Groundwater Discharge Permit from MDE. The Department may require an applicant for a system with a maximum daily flow of less than 10,000 gpd to obtain an Individual Groundwater Discharge Permit if specific project characteristics warrant additional monitoring or control or special permit requirements.

(3) An application for a large on-site sewage disposal system is submitted by the property owner, or property owner's agent, to the Approving Authority and MDE. Evaluation and review of an application is performed jointly by the Approving Authority and MDE.

(4) A large system incorporates uniform low-pressure distribution with dosing and resting features in its design and construction.

(5) Suitable sewage disposal area is set aside for the installation of an initial and two replacement systems at 100 percent of the peak daily flow.

(6) The initial installation is designed and constructed for 150 percent of the peak daily flow.

(7) A nitrogen balance analysis for the groundwater system is performed by a qualified professional and submitted to the Approving Authority and MDE. The nitrogen concentration at the property line or at any point adjacent to a water course does not exceed 10 mg per liter.

(8) A mounding analysis is performed by a qualified professional and submitted to the Approving Authority and MDE. The 20-year mound height is estimated and does not rise to a point where the minimum required separation distance between the bottom of the system and the water table is not maintained.

R. Maximum daily flow is used as the basis of disposal area design regardless of the type of treatment unit or disposal method proposed.

S. Greater absorption area than provided for in this regulation may be required by the Approving Authority based on local conditions and experience.

T. Fill material may not be used in conventional subsurface sewage disposal systems except as placed over open chambers or perforated pipe.

#### U. Sand Mound Systems.

(1) The criteria for a sand mound system are:

(a) Ground water is located at least 2 feet below the ground surface as measured during the period of the highest water table;

(b) Excessively permeable material or fractured bedrock is located at least 2 feet below the ground surface;

(c) Percolation rates measured after prewetting utilizing a method that measures vertical permeability are not faster than 1 inch per 2 minutes and not slower than 1 inch per 60 minutes; and

(d) The sewage disposal area has a slope of less than 12 percent.

(2) The Approving Authority may require the depth to groundwater or fractured rock to be greater than 2 feet below the ground surface to ensure proper operation of a sand mound system if the Approving Authority determines that local conditions make greater depths necessary.

(3) The criteria and conditions for performing site evaluation and testing for a sand mound system area:

(a) Tests are performed in the least permeable soil horizon which is located in the upper 24 inches of soil; and

(b) Tests are conducted with an apparatus which minimizes horizontal movement of water.

(4) The criteria for construction of a sand mound are:

(a) The long axis of the sand mound and the trench or bed is perpendicular to the slope.

- (b) All parts of a sand mound shall meet the horizontal separation distance in Regulation .04J of this chapter.
- (c) The linear loading rate, determined by dividing the design flow by the length of the gravel bed does not exceed 10 gallons per day per foot.
- (d) A two compartment septic tank or two tanks in series, with an effluent filter installed in the outlet baffle of the second tank or compartment, is used for pretreatment for all sand mounds that do not require BAT.
- (e) Sand mounds shall use a pressure distribution system which is designed to have a minimum pressure of 2 feet of head at the distal end.
- (f) The distribution system is installed level on a bed or in a series of trenches with at least 6 inches of gravel below the pipe.
- (g) The gravel is between 3/4 inch and 2 inches in size and free of fines.
- (h) A minimum of 2 inches of gravel is placed above the distribution pipe.
- (i) The gravel is covered with a geotextile filter fabric to prevent sand and fines from entering the gravel.
- (j) The trench or bed is constructed so that the bottom of the trench or bed is level.
- (k) The sand beneath the trench or bed is:
  - (i) Of an effective size between 0.25 and 0.5 mm and have a uniformity coefficient of 3.5 or less; or
  - (ii) Of an effective size between 0.15 and 0.3 mm and have a uniformity coefficient between 4 and 6 and contain less than 20 percent of material larger than 2.0 mm and less than 5 percent of material less than 0.053 mm.
- (l) Holes in the distribution lines are free of burrs and other protrusions.
- (m) The sand mound is covered with approximately a 6 inch layer of top soil and seeded.
- (n) The sand mound side slopes may not exceed a 3 to 1 grade regardless of the natural slope of the ground.
- (o) The top of the sand mound is crowned to allow rain water to run off.
- (p) Settling problems are corrected when they are detected.
- (q) Observation ports to measure effluent levels in the mound are installed:
  - (i) At the gravel and sand interface in the gravel bed or trench; and
  - (ii) At the soil and sand interface beneath the gravel bed.
- (5) The criteria for sizing sand mounds are:
  - (a) The bed or trenches in the mound are sized to absorb not more than:
    - (i) 1.2 gallons per square foot per day based on the bottom area of the beds or trenches for sand meeting the specification set forth in §V(4)(k)(i) of this regulation; and
    - (ii) 1.0 gallons per square foot per day based on the bottom area of the beds or trenches for sand meeting the specification set forth in §V(4)(k)(ii) of this regulation.
  - (b) The sand mound has a basal area sized to absorb effluent in accordance with the following:
    - (i) For a vertical percolation rate between 2 minutes per inch and 30 minutes per inch, not more than 1.2 gallons per square foot per day;
    - (ii) For a vertical percolation rate between 31 minutes per inch and 45 minutes per inch, not more than 0.75 gallons per square foot per day; and

(iii) For a vertical percolation rate between 46 minutes per inch and 60 minutes per inch, not more than 0.5 gallons per square foot per day.

(c) The basal area includes only that area that is directly below the trenches or bed and that area downslope from the trenches or bed.

(d) The amount of sand fill below the trench or bed may not be less than 1 foot.

(e) The total distance from the bottom of the trench or bed to the high water table may not be less than 4 feet except when a lesser separation is approved pursuant to Regulation .04C(3)(a) of this chapter.

(f) A minimum 25 foot wide area downslope of the sand mound is designated on a plan as an area protected from compaction and grading and free of structures such as buildings and driveways. If a limiting horizon that may restrict the vertical flow of effluent through the soil beneath the sand mound is present, this 25 foot wide area may be increased.

(6) Site preparation requirements are:

(a) The site is not compacted by earthmoving or other equipment;

(b) The grass or other vegetation is cut and removed as much as possible;

(c) The soil is plowed to a depth of 6 inches perpendicular to the slope;

(d) Work may not be done during wet weather, during wet soil conditions, or during freezing and thawing conditions;

(e) Trees on the site are cut at ground level and the stumps left in place; and

(f) A certified sand mound installer is present during construction of all sand mounds.

(7) Certification of Installers.

(a) A sand mound system may only be installed by a certified installer.

(b) The Maryland Department of the Environment may award a sand mound installer certification if the applicant has successfully completed a course of study and examination in the practice of construction of mound systems. The course and examination shall be approved by the Department of the Environment.

(c) The course of study and examination shall be given at least once each year by the Department of the Environment or the Department's designee.

(d) The certification is valid for a period of 3 years and may be renewed if the installer has complied with all the applicable laws and regulations.

(e) The Maryland Department of the Environment may withdraw certification at any time for violation of these regulations.

#### V. At-Grade Systems.

(1) The criteria for the use of an at-grade system are:

(a) Ground water is located at least 4 feet below the ground surface as measured during the period of the highest water table;

(b) Excessively permeable material or fractured bedrock is located at least 4 feet below the ground surface;

(c) Percolation rates measured after prewetting utilizing a method that measures vertical permeability are not faster than 1 inch per 2 minutes and not slower than 1 inch per 60 minutes; and

(d) The sewage disposal area has a slope of less than 12 percent.

(2) The criteria and conditions for performing a site evaluation and testing for an at-grade system are:

(a) Tests are performed in the least permeable soil horizon which is located in the upper 30 inches of soil; and

(b) Tests are conducted with an apparatus which minimizes horizontal movement of water.

(3) The criteria for construction of an at-grade system are:

(a) The long axis of the trench or bed is perpendicular to the slope;

(b) All parts of an at-grade system shall meet the horizontal separation distance in Regulation .04J of this chapter;

(c) The linear loading rate, determined by dividing the design flow by the length of the gravel bed may not exceed 9 gallons per day per foot;

(d) A two compartment septic tank or two tanks in series is used for pretreatment for all at-grade systems that do not require BAT;

(e) An at-grade system uses a pressure distribution system designed to have a minimum pressure of 2 feet of head at the distal end;

(f) The distribution system is installed level on a bed or in a series of trenches with at least 6 inches of gravel below the pipe;

(g) The gravel is free of fines and is between 3/4 inch and 2 inches in size;

(h) A minimum of 2 inches of gravel is placed above the distribution pipe;

(i) The gravel is covered with a geotextile filter fabric to prevent fines from entering the gravel;

(j) Holes in the distribution lines are free of burrs and other protrusions;

(k) An at-grade system is covered with approximately a 12 inch layer of top soil and seeded;

(l) An at-grade system's side slopes may not exceed a 3 to 1 grade and shall extend a minimum distance of 5 feet from the gravel bed regardless of the natural slope of the ground;

(m) The top of the at-grade system is crowned to allow rain water to run off; and

(n) Settling problems are corrected when they are detected.

(4) Criteria for Sizing an At-Grade System.

(a) The at-grade system has an effective gravel absorption area sized to absorb effluent in accordance with the following:

(i) 2 to 15 minutes per inch — 0.8 gallons per day per square foot;

(ii) 16 to 30 minutes per inch — 0.6 gallons per day per square foot; and

(iii) 31 to 60 minutes per inch — 0.4 gallons per day per square foot.

(b) The total distance from the bottom of the trench or bed to the high water table may not be less than 4 feet except when a lesser separation is approved pursuant to Regulation .04C(3)(a) and .04D of this chapter.

(c) A minimum 25 foot wide area downslope of the at-grade system is designated on a plan as an area protected from compaction and grading and shall remain free of structures such as buildings and driveways. If a limiting horizon is present beneath the at-grade system, this 25 foot wide area may be increased.

(5) The criteria for preparing a site for an at-grade system area:

(a) The site may not be compacted by earthmoving or other equipment;

(b) The grass or other vegetation is cut and removed as much as possible;

(c) The soil beneath the entire at-grade is plowed to a depth of 6 inches perpendicular to the slope;

- (d) Work may not be done during wet weather, during wet soil conditions, or during freezing and thawing conditions; and
  - (e) Trees on the site are cut at ground level and the stumps left in place.
- (6) Certification of Installers.
- (a) At-grade systems may only be installed by a certified installer.
  - (b) The Maryland Department of the Environment may award an at-grade installer certification, if the applicant has successfully completed a course of study and examination in the practice of construction of at-grade systems. The course and examination shall be approved by the Department of the Environment.
  - (c) The course of study and examination shall be given at least once each year by the Department of the Environment or the Department's designee.
  - (d) An at-grade system may be installed if a certified at-grade installer is present during the construction of the at-grade system.
  - (e) The certification is valid for a period of 3 years and may be renewed prior to its expiration if the installer has complied with all the applicable laws and regulations.

26.04.02.06

## **.06 Non-Conventional On-Site Sewage Disposal Systems.**

A. The Department of the Environment and the Approving Authority shall consider reasonable methods for correcting existing system failures and providing facilities for homes that lack indoor plumbing and will provide the best technical guidance in attempting to resolve existing pollution or public health problems. If a public sewer is not available and a conventional on-site sewage disposal system design cannot alleviate the problem or does not provide the best method of correction, the Department may approve new technology or experimental systems.

B. Innovative or alternative technology or experimental designs may also be used for new construction on existing lots of record. The use of non-conventional on-site sewage disposal systems on new construction where site limitations preclude the use of conventional on-site disposal systems shall be reviewed and approved using professional judgment. The site conditions, soil properties and ground water condition at the proposed site shall demonstrate adequate support for successful use of the proposed system as an alternative to a conventional on-site sewage disposal system.

C. Limits for Experimental Non-Conventional On-Site Sewage Disposal Systems Used in New Construction. The number of experimental non-conventional disposal systems approved for use on new construction is limited by:

- (1) The availability of personnel and equipment required for the extensive monitoring and evaluation associated with the installation of these systems; and
- (2) A system's potential to provide data required to adequately evaluate system operation on a site experiencing one of the major restrictions for conventional on-site sewage disposal systems found in Maryland.

D. Submission of Proposals. An applicant shall submit an application to the local Approving Authority and the Department of the Environment for review and approval. The applicant shall follow the following procedures.

(1) The Approving Authority may elect to perform the site evaluation or request the applicant to retain a professional consultant to prepare a hydrogeological report to demonstrate that the soil properties and ground water conditions at the proposed site supports the use of the proposed system. In all cases, the site evaluation should be performed with the assistance of the Water Management Administration's Regional Consultant of the Department of the Environment. The professional consultant retained by the applicant shall have adequate experience in examining soil properties and ground water, preferably in Maryland. The applicant shall obtain any available information on the effectiveness of the proposed system in use in similar settings, and shall submit this information as well as the hydrogeological report, to both the local Approving Authority and the Department of the Environment.

(2) Non-Conventional On-site Sewage Disposal System Design.

(a) System design may commence if both the local Approving Authority and Maryland Department of the Environment approve of the site and grant a permit for the proposed system.

(b) The applicant shall arrange for professional engineer, an Environmental Health Specialist, or other qualified consultant as determined by the Approving Authority, to design the proposed system.

(c) The applicant shall submit one set of drawings to the local Approving Authority and one set to the Department of the Environment for concurrent review and approval.

E. If a non-conventional on-site sewage disposal system, requires specialized operation or extensive maintenance, the applicant shall submit a satisfactory agreement that has been signed by the applicant, the local Approving Authority and Maryland Department of the Environment, which assures proper operation and adequate maintenance. For example, the Department and the Approving Authority may require a service contract for the life of the system.

F. The applicant shall record in the land records notice that the property is served by a non-conventional sewage disposal system and that the system requires special operation and maintenance, and shall submit a copy of this notice to the Approving Authority before a permit to construct may be issued. Monitoring requirements shall be determined using professional judgment. The local Approving Authority and the Department of the Environment shall monitor these systems for not less than 2 years after construction and full use.

G. Results from monitoring and testing programs will be used by the Department of the Environment in establishing new criteria for the use and design of non-conventional on-site sewage disposal systems.

H. Non-conventional on-site sewage disposal systems may not be considered as acceptable on-site sewage disposal systems with regard to the subdivision of land pursuant to COMAR 26.04.03.



26.04.02.07

**.07 Best Available Technology for Removal of Nitrogen (BAT).**

A. A person may not install, or have installed, an onsite sewage disposal system unless the onsite sewage disposal system utilizes BAT for any of the following:

- (1) New construction in either the Chesapeake Bay Watershed or the Atlantic Coastal Bays watershed;
- (2) New construction in any watershed of a nitrogen impaired body of water; or
- (3) A replacement system to serve a property in either the Chesapeake Bay critical area or the Atlantic Coastal Bays critical area.

B. New construction includes the renovation or repair of a residence or other building and the Approving Authority determines that the existing on-site sewage disposal system is not adequate to serve the proposed alteration or altered building.

C. The property owner shall maintain and operate all new and existing BAT systems for the life of the system through one of the following management measures:

- (1) The BAT is operated by a responsible management entity, acceptable to MDE, established by the Approving Authority or local government, to assume operation and maintenance of BAT systems;
- (2) The BAT is covered by a renewable operating permit, which is issued by or required by the Approving Authority and which includes enforcement provisions, inspections, and monitoring; or
- (3) The BAT is covered by a service contract that the property owner maintains with a certified service provider. If a BAT system is operated and maintained by a certified service provider. The owner shall ensure the BAT system is inspected and has necessary operation and maintenance performed at a minimum of once per year.

D. Certified Service Providers.

- (1) The Department shall maintain a list of certified service providers.
- (2) An individual may become certified if he completes and passes a course of study on operation and maintenance of BAT systems approved by the Department. The course of study shall include instruction on how BAT systems function as well as elements on operation, maintenance, and repair of BAT systems.
- (3) The Maryland Department of the Environment may revoke a certification of service provider for BAT systems for violation of these regulations.
- (4) A certified service provider shall report on inspection, operation and maintenance activities to the Department, or the Department's designee, in a manner acceptable to the Department on a yearly basis prior to the yearly anniversary of the date of installation.
- (5) The certified service provider shall have a certificate of qualification from the manufacturer of the BAT system being serviced.
- (6) A property owner may obtain certification as a service provider to maintain his system personally, subject to all the requirements of this regulation pertaining to operating and maintaining BAT systems.

E. A person who has completed a course of study approved by the Department for the installation of BAT, and has a certification of qualification for installing BAT systems from the manufacturer, is required to be present on the property while a BAT unit is installed.

F. Within 1 month of the completion of an installation, a person installing a BAT system shall report to the Department, or the Department's designee, in a manner acceptable to the Department, the address and date of completion of the BAT

installation and the type of BAT installed.

G. The owner of an onsite sewage disposal system with a design flow less than 1500 gpd, requiring a BAT system under §A or B of this regulation, may only install:

(1) A BAT system that has been approved by the Maryland Department of the Environment; or

(2) An individually engineered nonproprietary BAT system if a governmental agency or their designee is the responsible management entity or issues renewable operating permits.

H. The owner of an onsite sewage disposal system with a design flow greater than 1,500 gpd, requiring a BAT system under §A or B of this regulation may only install a BAT system that is individually engineered for the site and approved by the Department or the Department's designee.

I. A permittee shall construct a BAT unit in a manner and of materials acceptable to the Department and the Approving Authority.

J. If the applicant demonstrates that extremely low, variable or sporadic wastewater flow results in malfunctioning of the BAT system, the Department may grant a variance to the BAT requirement upon a request from the Approving Authority.

26.04.02.08

## **.08 Special Methods of Sewage Collection and Disposal.**

A. A person may not build a privy unless the privy will, in the judgment of the Department, prevent:

(1) The soil from coming in contact with any fecal matter; and

(2) Flies from gaining access to any fecal matter.

B. Privies shall be located and constructed so as to prevent contamination of ground and surface water. A privy shall be constructed in such a manner as to be insect and rodent free and to prevent odor nuisances. Location and construction plans shall be approved by the Approving Authority before issuing a sewage disposal construction permit.

C. Chemical toilets shall be constructed of impervious materials, vented to the outside air above the roof line of the structure housing them, and supplied with an adequate amount of the chemical agent used to reduce and deodorize the tank contents. Chemical toilets shall be used only for special term events, construction projects and in the abatement of problems.

D. When privies or chemical toilets become filled to recommended capacity, the owner shall remove the contents and dispose of the sewage in accordance with Regulation 09 of this chapter.

26.04.02.09

## **.09 Septage.**

A. The owner of a septic tank, seepage pit, privy, or watertight holding tank for sewage shall remove all solid and liquid contents as to prevent a nuisance or a menace to public health or comfort and shall dispose of the sewage in compliance with applicable State and local requirements.

### **B. Transportation.**

(1) A person engaged in the transportation of septage shall comply with §B(2) and (3) of this regulation.

#### **(2) Vehicle Requirements.**

(a) The owner of each vehicle used for transporting septage shall maintain the vehicle in a clean and sanitary condition; and

(b) Each vehicle is subject to inspection by the Department or the Department's designee.

(3) The owner shall comply with following vehicle identification requirements:

(a) The name of the septage hauler is legibly lettered on both sides of each vehicle used for transporting septage, and the lettering is at least 3 inches in height.

(b) The words "Sewage Only" is lettered on the rear of each vehicle and shall be at least 6 inches in height.

*26.04.02.10***.10 Variances.**

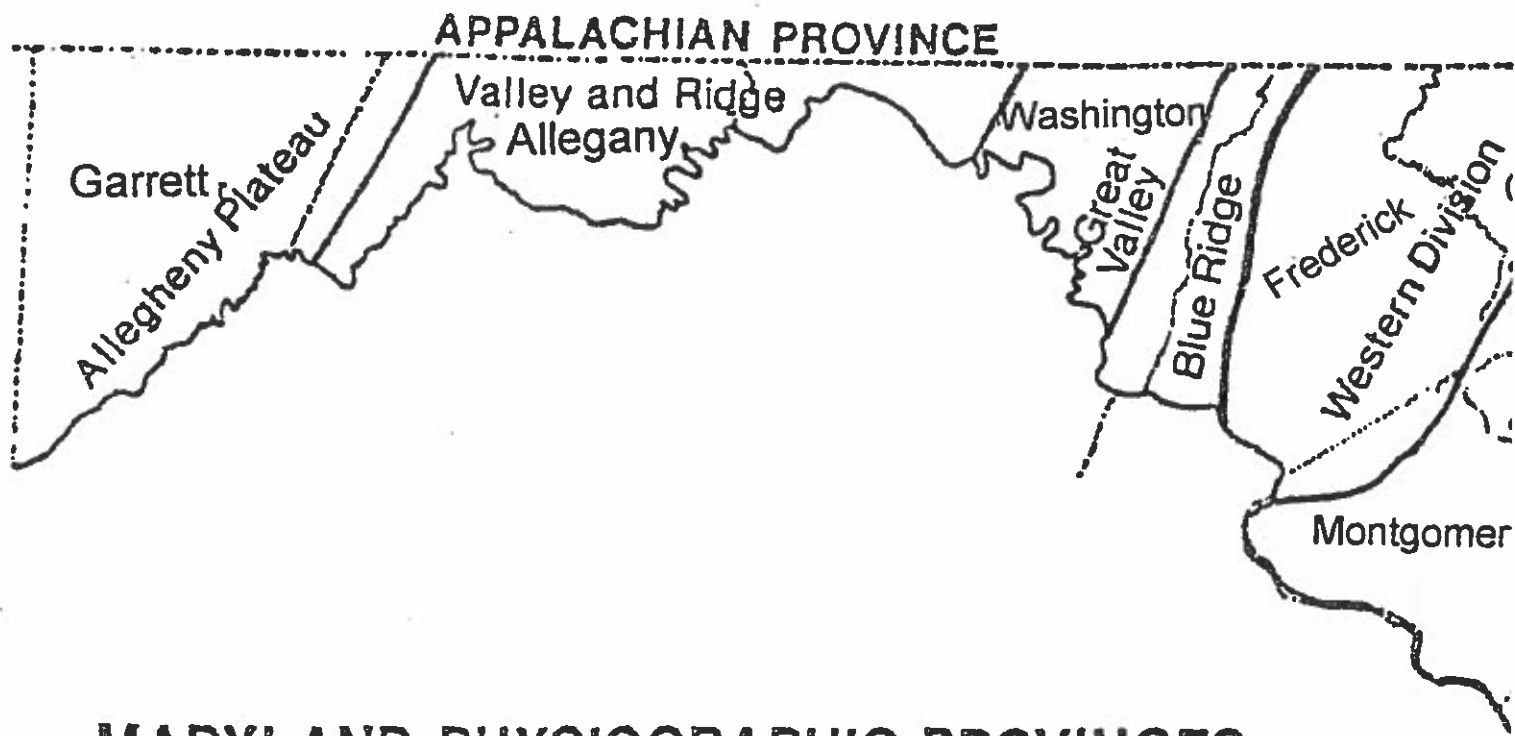
The Department of the Environment may grant variances to area, well siting, distances and slope requirements of these regulations upon the recommendation of the Approving Authority provided that the public health is protected.

*26.04.02.11***.11 Appeal.**

A person aggrieved by a final decision of the Approving Authority in a contested case has the right to have the decision reviewed in accordance with the provisions of the Administrative Procedure Act and other applicable statutes and regulations. All appeals shall be filed with the Director, Water Management Administration, within 30 days after notification of the final decision by the Approving Authority.

**26.04.02.12****.12 Penalty.**

A person who violates any provision of these regulations shall, upon conviction, be guilty of a misdemeanor and subject to a fine of not less than \$50 and not more than \$100 for each offense. Each day's failure to comply with any provision of these regulations shall constitute a separate violation. The Approving Authority may also seek injunctive relief to enforce provisions of this regulation by initiating appropriate civil proceedings.



MARYLAND PHYSIOGRAPHIC PROVINCES  
AND THEIR DIVISIONS



Board of Natural Resources  
Annapolis



26.04.02.9999

## Administrative History

### Effective date:

Regulations .01—.05 effective November 16, 1953; amended effective July 1, 1957, November 15, 1957, June 8, 1965, October 15, 1966, April 1, 1967, December 1, 1970

Regulations .01E and .02C amended, .02C-1 adopted effective December 17, 1984 (11.25 Md. R. 2134)

Regulations .06—.16 effective November 16, 1953

Regulation .17 effective June 1, 1957

Regulations .18—.21 effective November 16, 1953

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Regulations .01—.21 repealed and new Regulations .01—.11 adopted effective November 18, 1985 (12.23 Md. R. 2218)

Regulations .01, .02, .04, and .05 amended as an emergency provision effective May 6, 1986 (13.11 Md. R. 1267); emergency status extended at 13.20 Md. R. 2205 (Emergency provisions are temporary and not printed in COMAR)

Regulation .01 amended effective November 3, 1986 (13.22 Md. R. 2398)

Regulation .02 amended effective November 3, 1986 (13.22 Md. R. 2398)

Regulation .04 amended effective November 3, 1986 (13.22 Md. R. 2398)

Regulation .05 amended effective November 3, 1986 (13.22 Md. R. 2398)

Regulation .06 amended effective November 3, 1986 (13.22 Md. R. 2398)

Regulation .11 amended effective November 3, 1986 (13.22 Md. R. 2398)

Map recodified as Regulation .12

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Chapter recodified from COMAR 10.17.02 to COMAR 26.04.02

Regulation .01B amended effective March 25, 1996 (23.6 Md. R. 477)

Regulation .02C and D amended effective April 27, 1992 (19.8 Md. R. 806)

Regulation .03C amended effective March 25, 1996 (23.6 Md. R. 477)

Regulation .04J amended effective July 4, 1994 (21.13 Md. R. 1160)

Regulation .05O and Q amended effective April 27, 1992 (19.8 Md. R. 806)

Regulation .08 amended effective December 10, 1990 (17.24 Md. R. 2837)

Regulation .10 amended effective October 26, 1992 (19.21 Md. R. 1894)

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Chapter revised effective January 1, 2013 (39.19 Md. R. 1238)

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Regulations .01—.12 repealed and new Regulations .01—.12 adopted effective May 12, 2014 (41.9 Md. R. 522)

Map recodified as Regulation .13